REMARKS

(Preliminarily, the applicant requests the examiner to provide the applicant with a copy of the form PTO 1449 filed on August 10, 2001, indicating that the examiner has considered the references cited there. Also, the applicant only has a copy of the office action that was FAXed to us by the examiner, when the paper one apparently went astray. The applicant also asks the examiner to provide a paper copy of the office action for our records, including any list of references cited by the examiner.

The applicant has amended claim 1 to make clear that the target location as to which there is a change in position can be "any arbitrary" target location on the Besier shape and also to clarify that the change in position is "user-specified". The examiner rejected claim 1 and the claims that depend on it because of what is disclosed in the Hosoya patent especially with respect to his transformation mesh.

In Hosoya, the user can specify the shape of the transformation mesh in three ways that are illustrated in his figures 11, 12, and 13.

In figure 11 of Hosoya, the user can specify the degree of density of the mesh by selecting a point along a scale of densities. Of course, this selection of a density is not, in the words of amended claim 1, a "user-specified change in position of any arbitrary target location on a Bezier shape." To the contrary, in figure 11, there is no target location on a Bezier shape, let alone a target location that is user-specified.

In figure 12, the user is selecting the magnitude of waviness of the boundary of the transformation mesh. It is unclear how the user does this. The boxes shown on figure 12 do not even appear to be representations of the transformation mesh itself, and therefore are not themselves Bezier figure, but rather are only representations of the boundary lines of a hypothetical mesh arranged in a equilateral configuration. For example, the actual mesh may be rectangular, but the representations of the boundaries in figure 12 are shown as equilaterals. Figure 12 and its associated text neither describe nor suggest "a user-specified change in position of any arbitrary location on a Bezier shape." To the contrary, figure 12 implies that there is only one location that the user can manipulate on the boundary of the hypothetical equilateral.

Figure 13 does not add what is missing from the other two figures. In figure 13, the user manipulation is only of a corner of the mesh. The user is not able to manipulate any arbitrary target location on the mesh.

Thus, amended claim 1 is patentable over what the examiner cites in the Hosoya patent. Without conceding any of the positions taken by the examiner with respect to claim 1 or the claims that depend on it, the applicant notes that all of the claims that depend on claim 1 are patentable for at least the same reasons.

Without conceding any of the positions taken by the examiner with respect to claims 16 and 17, those claims, as amended, are patentable for at least the same reasons as claim 1.

In amended claim 18, the user interface element is displayed other than on a boundary of the Bezier shape. An example of what is recited in claim 18 is shown in figure 12. The grey arrow points to the square user interface element in a prior position (not on a boundary of the Bezier shape), and the black arrow points to the new location to which the user has dragged the user interface element. The motion of the square user interface element of figure 12 is constrained to the vertical axis and the resulting distortion of the Bezier shape is predefined, as recited in amended claim 18. The examiner rejected claim 18 based on figure 1 of the Hosoya patent, items 2 and 12. But nothing in figure 1 or the related text describes or suggests displaying a user interface element on a Bezier shape. If the examiner meant also to refer to figures 11, 12, and 13, those figures also neither describe or suggest the user interface element being displayed other than on a boundary of the shape.

Without conceding any of the positions taken by the examiner, claim 18 and the claims that depend on it are patentable for the reasons given above.

The applicant has also amended claim 2 to respond to the examiner's rejection under section 112.

The applicant asks that all claims be allowed. A check for excess claim fees and a check for a Petition for Extension of Time fee are enclosed. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 4/27/00

David L. Feigenbaum
Reg. No. 30,378

Fish & Richardson P.C.
225 Franklin Street
Boston, Massachusetts 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

20423188.doc

Version marked to show changes

1. (amended) A method comprising

receiving relocation information indicative of a[n intended] user-specified change in position of [a] any arbitrary target location on a Bezier shape, the [contour of the] Bezier shape being governed by control points, and

in response to the relocation information, determining new positions for canonical locations on the curve or surface based on predefined [intended] behaviors of the canonical locations.

2. (amended) The method of claim 1, 23, or 24 in which the shape comprises a d-degree Bezier curve, d an integer greater than 1, governed by d+1 control points.

3. (unchanged) The method of claim 2 in which there are d+1 canonical locations.

4. (amended) The method of claim 1, 23, or 24 further comprising

adjusting the control points so that the Bezier shape contains the canonical locations in their new positions.

5. (unchanged) The method of claim 1 in which the Bezier shape comprises a curve or a surface.

6. (amended) The method of claim 1, 23, or 24 further comprising rendering the Bezier shape based on the new positions of the d+1 canonical locations.

7. (unchanged) The method of claim [1] 6 in which the target location in its changed position lies on the rendered Bezier shape.

8. (amended) The method of claim 1, 23, or 24 in which the predefined [intended behavior is] behaviors are expressed in response functions that define the relationship between changes in positions of target locations and changes in positions of canonical locations.

9. (amended) The method of claim 3 in which the Bezier shape comprises a curve, the d+1 canonical locations define d sections in order along the shape from one end to the other end, and the predefined intended behavior comprises the following:

when the target location is in the first section, the one end is relocated, and the other end is constrained to its original location, and

when the target location is in the dth section, the other end is relocated and the one end is constrained to its original location.

10. (amended) The method of claim 1, 23, or 24 in which the Bezier shape comprises a d-degree curve, the one end and the other end comprise end points of the curve, and the target location comprises a point along the curve.

11. (amended) The method of claim 1, 23, or 24 in which the Bezier shape comprises a 3-degree curve and there are four canonical locations.

12. (amended) The method of claim 1, 23, or 24 in which the Bezier shape comprises a 2-degree curve and there are three canonical locations.

13. (amended) The method of claim 1, 23, or 24 in which the control points are adjusted using a pre-computed basis coefficient matrix.

14. (amended) The method of claim 1, 23, or 24 in which the Bezier shape comprises a surface and in which the position of the target location is determined by forming a mesh on the surface and searching quadrilaterals of the mesh.

15. (unchanged) The method of claim 11 further comprising processing the relocation information as a series of curve relocations.

16. (amended) A medium storing machine readable instructions arranged to cause a machine to

receive relocation information indicative of a[n intended] user-specified change in position of [a] any arbitrary target location on a Bezier shape, [the contour of] the Bezier shape being governed by control points, and

in response to the relocation information, determine new positions for canonical locations on the shape based on predefined [intended] behaviors of the canonical locations.

17. (amended) A method comprising

receiving relocation information indicative of a[n intended] user-specified change in position of [a] any arbitrary target location on a Bezier shape, [the contour of] the Bezier shape being governed by control points,

in response to the relocation information, determining new positions for canonical locations on the shape based on predefined [intended] behaviors of the canonical locations, the predefined intended behaviors being expressed in scaled response functions that define the

relationship between changes in positions of target locations and changes in positions of canonical [positions] locations,

adjusting the control points so that the Bezier shape contains the canonical locations in their new positions, and

rendering the Bezier shape based on the new positions of the canonical locations so that the target location in its changed position lies on the rendered Bezier shape.

18. (amended) A method comprising

enabling a user to drag a user interface element displayed [in association with] on a Bezier shape to indicate a[n intended] predefined distortion of the Bezier shape, [the contour of] the Bezier shape being governed by control points, the user interface element being displayed other than on a boundary of the shape, and

in response to the dragging, effecting the [intended] predefined distortion by setting new positions for the control points.

19. (unchanged) The method of claim 18 in which the intended predefined distortion is effected by modifying a surface equation to effect the setting of new positions of the control points.

20. (unchanged) The method of claim 18 in which the distortion is symmetric.

21. (unchanged) The method of claim 18 in which the distortion is wave-like.

22. (unchanged) The method of claim 18 in which the user interface element comprises a handle that is constrained to move in a single direction during dragging.

New claims 23 and 24 have been added.